

## ABSTRACT

A complex multiplier 51, 500, 600 for use in a radio receiver 20,30,50,60 for receiving a carrier signal modulated by a wanted signal, the modulated carrier  
5 signal occupying one of a plurality of channels whose central frequencies are separated from one another by a fixed frequency referred to as the channel spacing, the apparatus including a local oscillator 28 for generating first and second signals at a frequency which is not an integral multiple of half the channel spacing whereby when the received carrier signal is mixed with the  
10 first and second signals, a complex, digital Very Low Intermediate Frequency (VLIF) signal is generated in which the wanted signal is centred about a VLIF which is slightly larger than half the channel spacing. The complex multiplier phase and gain adjustment means for balancing the phase and gain of the I and Q components of the VLIF signal prior to or during its down-conversion to  
15 base-band.